MICHAEL O. LEAVITT
Governor

OLENE S. WALKER
Lieutenant Governor

State of Utah

Department of Transportation

JOHN R. NJORD, P.E.
Executive Director

October 31, 2003

Dear Provo Canyon Highway Project Participant:

I am writing to inform you that the Federal Highway Administration ("FHWA") has given its formal approval for the construction of improvements to US 189 in the Provo Canyon between Wildwood and Deer Creek State Park ("Project"). Because you submitted comments on the Final Supplemental Environmental Impact Statement for the Project [or: because you are a resident of the Project area], I wanted to make sure you were aware of FHWA's decision.

I have enclosed for your information a copy of FHWA's Record of Decision approving the Project. The Record of Decision includes a copy of FHWA's Response to Comments on the Final Supplemental Environmental Impact Statement for the Project.

Now that FHWA has approved the Project, the Utah Department of Transportation is moving forward to complete final design and right-of-way acquisition. We anticipate construction will begin in early 2004. Construction is expected to last two construction seasons, and be complete by Fall 2005.

Because of the public interest in the Project, UDOT will host a public information meeting to explain the preliminary construction plans for the Project and to provide an update on the design of the Project. The meeting will be held:

6 – 8 p.m.
Monday the 17th of November
Canyon Meadows Club House

UDOT officials and engineers, as well as UDOT's engineering consultants, will be available at the meeting to answer your questions about the Project.

The Provo Canyon Highway Improvement Project will improve safety along US 189 and reduce congestion for thousands of travelers who use this important route. Although construction will involve permanent as well as temporary impacts, UDOT has taken great care to minimize those impacts and to design an improved US 189 that will respect the natural beauty of the Provo Canyon and the needs of those who live in and use the Provo Canyon. I hope you will attend the Public Information Meeting and learn more about the Project.

Sincerely,

Brent Schvaneveldt, P.E.
UDOT Region 3 Project Manager

Region Three
658 North 1500 West • Orem, Utah 84057

Utah!

U.S. Department
Of Transportation
Federal Highway
Administration

Utah Division
2520 West 4700 South, Ste. 9A
Salt Lake City, UT 84118-1847

October 27, 2003

John Njord, Executive Director
Utah Department of Transportation, Box 1245
4501 South 2700 West
Salt Lake City, Utah 84119

SUBJECT: Record of Decision for Final Supplemental Environmental Impact Statement, U.S. Highway 189, and Wildwood to Heber Valley

Dear Mr. Njord:

Pursuant to 23 CFR 771.127, the Federal Highway Administration, Utah Division, has issued a Record of Decision (ROD) for the above referenced project and we are enclosing an original copy for your records. The ROD is considered a public document and should be made available to anyone requesting a copy. In accordance with 40 CFR 1505.2, the ROD summarizes the mitigation commitments for the project and these commitments are to be considered conditions for the funding of the project. Please ensure that all mitigation measures are incorporated into the Plans, Specifications & Estimate (PS&E) package and monitored throughout the construction.

If you have any questions, or need any additional documentation, please don't hesitate to call me at 801-963-0182.

Sincerely yours,

Michael L. Morrow

Enclosure

cc:
Brent Jensen, Environmental Director, UDOT
Traci Conti, Director, UDOT, Region 3
Brent Schvaneveldt, Project Manger, UDOT, Region 3

RECORD OF DECISION

U.S. Highway 189
Wildwood to Heber Valley
Final Supplemental Environmental Impact Statement
Utah and Wasatch Counties, Utah

INTRODUCTION

This Record of Decision (ROD) approves two related transportation projects. The first project (Highway Reconstruction) involves the proposed upgrading of US-189 in Provo Canyon, as part of the Provo Canyon Improvement Project (Project). The second project (Trail Extension) involves the proposed extension of the Provo/Jordan River Parkway Trail through Provo Canyon.

These two projects are both located in Provo Canyon, and in certain locations they are in close proximity to one another. In addition, both projects would involve the use of federal funds under Title 23 of the U.S. Code, and as a result both require Federal Highway Administration (FHWA) approval. Given these relationships, both projects were considered together in the Final Supplemental Environmental Impact Statement (FSEIS) issued on April 17, 2003.

HIGHWAY RECONSTRUCTION

Background

The Provo Canyon Improvement Project consists of a series of improvements to existing roads from the intersection of State Route 52 (800 North) and I-15 in Orem, Utah to the intersection of US 189 and US 40 in Heber City, Utah. The Project has been in development since the early 1970s.

The Project as a whole was initially studied in an Environmental Impact Statement (EIS) issued in 1978. Between 1980 and 1984, the first section of the Project was constructed between I-15 in Orem and Murdock Diversion (Murdock Diversion is located just past Olmstead Junction on US-189). Further construction of the Project was halted in 1986 as a result of litigation.

Consequently, the first Supplemental EIS (SEIS) was prepared for the Project in 1989. The 1989 SEIS evaluated alternatives for completing the Project between Murdock Diversion and Heber City. It resulted in a ROD issued in 1990, which approved the upgrade of US-189 to four lanes, with partial control of access, from Murdock Diversion to Heber City.

The preferred alternative approved in the 1990 ROD was divided into four distinct segments for purposes of final design and construction.

- Murdock Diversion to Upper Falls Segment - 5.5 kilometers (3.4 miles)
- Upper Falls to Wildwood Segment - 4.0 kilometers (2.5 miles)
- Wildwood to Deer Creek State Park Segment - 8.5 kilometers (5.3 miles)
- Deer Creek State Park to Heber City Segment - 15.3 kilometers (9.5 miles)

Since 1990, two of those four segments have been completed – Murdock Diversion to Upper Falls, and Upper Falls to Wildwood. As a result of the work completed under the 1989 SEIS and a 1995 Reevaluation, as well as the work previously completed under the 1978 EIS, there now exists a completed four-lane roadway with partial control of access along SR 52 and US-189 from Orem to Wildwood.

The FSEIS, issued in April 2003, was the second SEIS for the Project. It addressed the uncompleted portion of the Project, from Wildwood to Heber City. Within these termini, the FSEIS focused primarily on the segment from Wildwood to Deer Creek State Park, because that is the segment in which new information has been developed and changes in the project were proposed. The other remaining segment of the Project, from Deer Creek State Park to Heber City, has yet to be programmed for funding. In addition, there are no known issues in that segment that require further evaluation at this time. Nonetheless, for disclosure purposes, the 2003 FSEIS included updated information for the Deer Creek State Park to Heber City Segment.

Decision

After independently reviewing the whole administrative record, technical reports and public input, the Federal Highway Administration (FHWA) concurs with the Utah Department of Transportation (UDOT) in its selection of the Preferred Alternative for improvements to U.S. Highway 189 (US-189) between Wildwood and Deer Creek State Park. The Preferred Alternative is also the environmentally preferred alternative and is described in the 2003 FSEIS.

The purpose of and need for the overall Project is to improve the safety and the traffic carrying capacity of SR 52 and US-189 from I-15 in Orem to U.S. Highway 40 at Heber City. The Project as a whole will meet that need by improving existing substandard geometrics and unsafe conditions of the highway to meet existing and projected traffic demands for a 20-year planning horizon. The segments of the Project that have previously been completed have resulted in capacity and safety improvements for traffic using the SR52/US-189 corridor. Completion of the Wildwood to Deer Creek State Park Segment will contribute to further improvements in capacity and safety for traffic in this corridor, by upgrading a substandard two-lane section of US-189 to a four-lane divided highway with partial control of access.

The selection of the Preferred Alternative for the Wildwood to Deer Creek State Park Segment was based on an evaluation of information found in the 2003 FSEIS, a variety of technical and engineering analyses, and substantial input from the public, local governments, and various federal and state agencies. The sensitivity of the environment played an important role in the development of the Preferred Alternative, which is referred to in the 2003 FSEIS as the "2002 Preferred Alignment".

The Deer Creek State Park to Heber City Segment of the Project was considered in the 2003 FSEIS, but is not presently programmed for funding. Therefore, in order to ensure updated analysis of environmental issues and additional opportunities for public involvement, an additional SEIS will be prepared for that segment before proceeding with construction of that segment.

TRAIL EXTENSION

Background

The Provo-Jordan River Parkway Trail (Trail) system currently runs from the Great Salt Lake through Provo and Orem, and up Provo Canyon as far as Vivian Park. Because the environmental documentation for the reconstruction of US-189 addresses the same area and resources as the extension of the Trail from Vivian Park to Deer Creek Dam (Trail Extension), that action has been included in this document.

Decision

FHWA also concurs with UDOT in the selection of the Preferred Alternative for the extension of the Provo-Jordan River Parkway Trail (Trail). The preferred Alternative is also the environmentally preferred alternative and is described in the 2003 FSEIS. Extending all or even a portion of the Trail will provide a safer alternative to riding and walking on highway shoulders and considerably improve the recreational experience. Selection of the Preferred Alternative for the Trail was based upon a variety of analyses, input from the public and various agencies, and environmental sensitivity. The Preferred Alternative is referred to in the 2003 FSEIS as the Trail Extension Preferred Alternative.

ALTERNATIVES CONSIDERED

HIGHWAY RECONSTRUCTION

As noted above, the 2003 FSEIS is the most recent in a series of studies that have been completed for the Provo Canyon Improvement Project since the 1970s. The previous studies included an Environmental Impact Statement in 1978 (1978 EIS) and a Supplemental Environmental Impact Statement in 1989 (1989 SEIS). The 1989 SEIS resulted in a decision to expand US-189 to four lanes throughout the length of Provo Canyon, which would connect Orem to Heber City.

The 2003 FSEIS summarized the alternatives analyses contained in those previous documents. As explained in Chapter 2 of the 2003 FSEIS, the alternatives previously considered in the 1978 EIS included a full range of alternatives including: No-Build Alternative, alternative routings within the corridor, partial alternative corridors, full alternative corridors, and alternative modes of transportation. The alternatives considered in detail in the 1989 SEIS included a range of alternatives including: No-Build Alternative, the Accessibility Alternative, the Mobility Alternative, and the Multi-Use Alternative.

In the 1978 EIS, it was determined that only an "in canyon" alternative would address the Project's purpose and need. A full range of "out of canyon" alternatives were identified and evaluated in the 1978 EIS and included the study of routes through American Fork, Diamond Fork/ Spanish Fork, and Hobble Creek Canyons. The EIS explained that the Diamond Fork and Hobble Creek corridors were not prudent alternatives due to summit elevations of near 8000 feet, rugged mountain terrain, and additional corridor lengths of 13 and 16 miles, respectively, which impose difficult and expensive construction solutions (estimated to be more than 4 times as expensive as the Provo Corridor). The EIS also explained that the American Fork alternative would be 10 miles longer in length and estimated that construction on this alignment would be 2 1/2 times as expensive as the Provo Corridor. Additionally, the EIS concluded that the selection of any of these "out of canyon" corridors would result in higher ecological impacts. For these reasons, these "out of the canyon" alternatives were not selected for additional evaluation and consideration.

These "out of canyon" alternatives remain unreasonable and imprudent due to the reasons stated above, especially the additional length of the corridors and the potential magnitude of the environmental impacts to these other canyons, which have only experienced limited development. There are no parallel alternative routes within this area that would accommodate the projected traffic volumes. Additionally, the geography of the area does not allow a viable alternative to move traffic through this canyon or through another canyon, and the traffic data clearly indicates the need to improve US-189 in Provo Canyon. Travelers desiring to travel from Provo/Orem to Heber, east on US-40, or to area recreational opportunities in the area or from Heber to Provo/Orem will continue to use existing US-189 (the shortest route) as a major travel corridor. Accordingly, the consideration of "out of canyon" alternatives does not meet a key component of the Project's purpose and need, which is to eliminate existing hazardous driving conditions and to provide a facility that has the capacity to safely accommodate projected future traffic.

The ROD for the 1989 FSEIS concludes that US-189 should be upgraded to four-lanes (Preferred Alternative) to improve safety and provide an acceptable level of service. The alternatives analysis in the 2003 FSEIS examined alternatives for upgrading US-189 to four lanes from Wildwood to Heber City, and focused in particular on alignment alternatives between Wildwood and Deer Creek State Park. Within this segment of the Project, the FSEIS examined in detail the 1989 SEIS Alignment, the 2002 Preferred

Alignment, and the No-Build. It was necessary to consider alignment alternatives in this area because of environmental concerns that had arisen regarding the 1989 SEIS Alignment (the alignment selected in the 1989 SEIS). The 2003 FSEIS also provided updated environmental information on the Deer Creek State Park to Heber City segment.

As part of the 2003 FSEIS, a new traffic study was performed in 2000 to assess whether projected traffic demand along US-189 still required US-189 to be upgraded to four lanes in Provo Canyon. That study showed that traffic demand on US-189 had increased at a higher rate than previously predicted and that without improvements, demand would soon exceed the capacity of US-189. The analysis also verified that, over the 20-year planning horizon of the Project, a four-lane facility in Provo Canyon is necessary to provide sufficient capacity to meet projected demand. Based on the analysis, the 2003 FSEIS determined that the only reasonable alternatives for the Preferred Alignment were 4-lane roads in Provo Canyon. Alternatives that are located outside the canyon or that involve less than four travel lanes do not meet the purpose and need for the Project and therefore are not reasonable or prudent alternatives.

The 2002 Preferred Alignment is the environmentally preferred alternative for the Wildwood to Deer Creek State Park Segment. The 2002 Preferred Alignment generally follows the 1989 SEIS Alignment, with several substantial changes to reduce environmental impacts and improve constructability. Advantages of this alignment in comparison with the 1989 SEIS Alignment are as follows:

- Movement of the highway away from the Provo River (reduced water quality, fisheries, and habitat impacts);
- Increased geotechnical stability;
- Elimination of river bridges;
- Reduced human impacts (noise, traffic delays, and relocations);
- Reduced cultural resource impacts; and
- Improved constructability (less cost).

The 2002 Preferred Alignment also involves some impacts that would have been avoided by the 1989 SEIS Alignment. These additional impacts include the following:

- Impacts to the Canyon Meadows development; and
- Impacts to the Deer Creek Reservoir Dam Complex, which is a historic property eligible for the National Register of Historic Places.

The 2003 FSEIS also re-assessed the No-Build and potential Three-Lane Alternatives that were dismissed in previous studies for failing to meet the Project's purpose and need. Based on the updated traffic study, those alternatives were dismissed again because they failed to provide sufficient traffic capacity to meet the Project's purpose and need.

Post-FSEIS Geotechnical Review

A portion of the Preferred Alignment crosses a prehistoric landslide known as the Hoover Slide. Although there have been local slides where the existing US 189 crosses the Hoover Slide, the slide mass underlying the Canyon Meadows subdivision appears to be stable. In response to comments received on the 2003 FSEIS, additional geotechnical information was considered following the conclusion of the 2003 FSEIS comment period. Additionally, Landslide Technology performed an independent peer review of the August 2003 Geotechnical Engineering Study.

These reviews confirmed that the 2002 Preferred Alignment is, from a geotechnical perspective, preferable to the 1989 SEIS Alignment because the 2002 Preferred Alignment crosses the Hoover Slide at a more stable location. These reviews also identified design, construction and stabilization measures that will be further considered as part of final design of the project. Those measures are incorporated into the Measures to Minimize Harm, Earth Resources section.

During final design, UDOT will continue to evaluate and refine the design of the project. The final design for this project will comply with all applicable UDOT design standards, including standards for maintaining slope stability.

Post-FSEIS Highway Traffic Noise review

The 2003 FSEIS (Chapter 4) contains an analysis of the potential noise impacts to sensitive receivers adjacent to the proposed roadway segment between Wildwood and Deer Creek State Park. During the development of this study, previous project noise studies were reviewed and updated with additional highway traffic noise analysis. As part of this analysis, seven sensitive noise receivers were monitored for existing traffic noise levels and design year noise levels were predicted for the 2002 Preferred Alignment. Within the Canyon Meadows Development, the building closest to the Preferred Alignment was selected as the sensitive receiver. Due to concerns about highway traffic noise impacts expressed by Canyon Meadows residents in comments on the DSEIS, additional noise analysis was undertaken in the 2003 FSEIS. This additional analysis included the development of noise contours for the entire platted area of the Canyon Meadows Development in the proximity of the new highway. This information was displayed in FSEIS Figure 4-2 on page 4-43; however, only the portion of the development near the Canyon Meadows office was depicted.

Following the FSEIS, Canyon Meadows residents submitted additional comments expressing concerns about traffic noise impacts. To address these concerns, all of the platted lots in the Canyon Meadows Development were included in the noise contour analysis and were geo-referenced to an aerial photograph with the predicted future noise analysis contour results overlaid on the photograph to depict the future noise-level contours relative to the existing platted lots. The results of this additional noise analysis were provided to Canyon Meadows by memorandum dated August 15, 2003. The results indicated that all of the existing platted residential units (receptors) in Canyon Meadows are beyond the predicted future 65 dBA noise-level contour. Also none of receptors experience an increase of noise level greater than 10 dBA. The UDOT Noise Abatement Policy approved by FHWA in June of 2000, requires the consideration of the noise abatement in those instances when predicted noise impacts exceed 65dBA or when the predicated design noise level exceeds the existing noise level by 10 dBA or more. Based on these established policies, none of the Canyon Meadows residential units would experience traffic noise impacts that would require mitigation.

On September 1, 2003, a representative of the Canyon Meadows Development contacted FHWA and requested that the issuance of this ROD be delayed until they could conduct their own noise simulation adjacent to the Canyon Meadows Development. At their request, a FHWA Division Office representative attended the noise simulation on October 6, 2003 to observe the methodology and results of the simulation. On October 8, 2003, the Canyon Meadows Development noise consultant delivered a written report regarding the noise simulation to the FHWA Division Office.

The written report submitted by Canyon Meadows concluded that, except for the southern end of the development near lot 20A, future noise levels "would fall within acceptable L_{eq} limits." For lot 20A, the printout readings for the four simulations were 64.9, 69.8, 63.3, and 60.9 dBA. This simulation, which was not conducted in accordance with FHWA highway traffic noise prediction methodology (23 CFR 772.17), resulted in noise levels at a single receptor ranging from 60.9 to 69.8 dBA, an almost doubling of perceived sound levels between the low and the high readings.

The FHWA's review of potential traffic noise impacts has included: consideration of the results of the FHWA Traffic Noise Model, which modeled the predicted future noise level at Lot 20A to be below 65 dBA; direct observation of the Canyon Meadows noise simulation by FHWA staff; FHWA staff discussions with the Canyon Meadow noise consultant, FHWA noise experts, and the UDOT noise consultant (who also observed the noise simulation); review of the noise report submitted to FHWA by the Canyon Meadows noise consultant; and consideration of the wide disparity in results for the lot 20A noise receptor. Based on this comprehensive review, FHWA concludes (1) that the accuracy of the Canyon Meadows simulation is questionable, with the potential for producing readings greater than actual noise levels from the project, because of the simulation methodology used, the short sound measurement intervals (five minutes), and the variability of results; and (2) that any noise increases from the construction of the 2002 Preferred Alignment to Canyon Meadows residents and other identified

sensitive noise receptors are not expected to reach a 65 dBA or greater sound level which would require the consideration of noise abatement for Noise Abatement Criteria Activity Category B land uses (23 CFR 772.5(g) and 11(c); and UDOT Noise Abatement Policy, dated April 2000). Consequently, while the additional traffic noise data submitted by Canyon Meadows has been considered, based on UDOT's Noise Abatement Policy, it does not justify the adoption of any additional mitigation measures.

Environmental Impacts

Construction of the 2002 Preferred Alignment will reduce existing and projected traffic congestion and improve safety to all highway users. Within the Wildwood to Deer Creek State Park Segment, impacts of the Preferred Alignment will include the following:

- Approximately 9.09 hectares (22.46 acres) of habitat for wildlife would be impacted.
- Approximately .77 hectare (1.90 acres) of wetlands would be impacted and mitigated.
- Some fishery habitat in Deer Creek would be lost, but habitat would be increased by stream restoration and habitat improvement.
- The potential for water quality impacts to the Provo River from sedimentation would increase during construction, but these impacts would be minimized by implementation of project specific Storm Water Pollution Prevention Plan prior to construction.
- Significant Noise impacts and long-term air quality impacts are not anticipated as a result of constructing this project.
- No threatened or endangered species would be adversely affected.
- The 2002 Preferred Alignment would be in compliance with the Project Area land use plans and would not impact any category of farmland.
- Social-economic impacts on the Canyon Meadows community, including an increased dissatisfaction level, would increase relative to the 1989 alignment, but no homes would be taken and noise and visual impacts will be minimized.
- The Deer Creek Reservoir Dam Complex and one prehistoric site would be impacted, but these impacts have been considered in consultation with the State Historic Preservation Officer and mitigation measures have been adopted in a Memorandum of Agreement (Appendix G of this FSEIS).

- Access to recreational sites in Provo Canyon would improve as a result of this project.

- Visible cuts and fills will occur in the project area, but these areas will be revegetated.

TRAIL EXTENSION

The 2003 FSEIS describes the development of alternatives for the Trail extension and presents the environmentally preferred alternative for the Trail, which will follow existing roads and result in no additional disturbance or impacts.

SECTION 4(f)

Section 4(f) applies to the use of land from a publicly owned public park, recreation area, wildlife/waterfowl refuge, or land in a historic site of National, State, or local significance as determined by the officials having jurisdiction over that land. Chapter 5 of the 2003 FSEIS provides a detailed discussion of the Section 4(f) resources within the project area, impacts to them under the various alternatives, and approaches to avoidance of those resources.

Deer Creek Reservoir Dam Complex

FHWA has determined that the 2002 Preferred Alternative for the highway project would impact one 4(f) property, the Deer Creek Reservoir Dam Complex. The 2002 Preferred Alignment would involve constructing the roadway across the dam face, which would result in the placing of large volumes of fill material upon the dam face. The use of this Section 4(f) property has been closely coordinated with and is supported by its owner, the U.S. Department of Interior Bureau of Reclamation (BOR), because its use would move the existing highway off the top of Deer Creek Dam and the additional fill material will help stabilize the dam against future seismic events. The BOR is also currently in the process of modifying the Deer Creek Dam. They have stripped off most of the cobble outer layer and are excavating a hole at the toe of the dam in order to remove some layers of soil that have the potential to liquify during an earthquake. The hole will be approximately 200 feet wide by 700 feet long and will be approximately 60 feet deep. Once they remove the liquefiable soils, they will replace them with better soils obtained from a materials pit near the dam. In addition, they plan to replace the spillway gates once the road is moved off the top of the dam. Photographs of this ongoing work have been included in the project file.

FHWA has determined that: (1) there is no prudent and feasible alternative that avoids the use of this Section 4(f) property; and (2) the project incorporates all possible planning to minimize harm resulting from the proposed use of this property. These findings are explained in the FSEIS and are summarized below.

Consideration of Avoidance Alternatives

The Section 4(f) evaluation in the 2003 FSEIS includes an analysis of two alternatives that would avoid the Deer Creek Dam Complex while providing a four-lane US-189 through Provo Canyon. These avoidance alternatives were (1) the 1989 SEIS Alignment and (2) the Split Alignment.

Each of these avoidance alternatives would require the construction of one or more lengthy bridges across Provo Canyon. These bridges would be needed in order to avoid crossing the river on the face of the dam. Bridging the river would result in substantially increased costs, ranging from an additional $7 million for the 1989 SEIS Alignment to an additional $13.7 million for the Split Alignment, of an estimated $55 million project. In addition, bridging the river would result in direct impacts to recreational land in the canyon as well as substantial visual impacts in an area highly valued for its aesthetic and recreational features; the visual impacts would be particularly great for the Split Alignment, because it requires a longer bridge structure. Additional bridges would also increase the potential for impacts to water quality, fisheries and wildlife habitat.

Moreover, both the 1989 SEIS Alignment and the Split Alignment would involve direct impacts to other section 4(f) properties including the Heber Valley Historic Railroad overpass and Deer Creek State Park. Construction would also occur in a known avalanche location, which would require construction of an additional avalanche shed to minimize the risk of avalanche impacts on users of the highway.

Lastly, in the case of the 1989 SEIS Alignment, the alignment tied into the reservoir at a lower elevation than the crest of the dam, creating a notch into the reservoir that had the potential to act as an additional or alternate spillway. The risk of creating an alternate spillway was considered the fatal flaw of this alignment. The value engineering (VE) team looked at a modification to this alignment to avoid this fatal flaw. Their modification was called the Split Alignment, which is discussed above.

Based on all of these factors, the 1989 SEIS Alignment and the Split Alignment are not prudent and feasible alternatives to the proposed use of the Deer Creek Dam Complex.

As previously discussed, alternatives that are located outside the canyon, or that involve less than four travel lanes, do not meet the purpose and need for the Project and therefore are not prudent alternatives for purposes of compliance with Section 4(f).
In summary, for the reasons given in Chapter 5 of the FSEIS and summarized above, there is no prudent and feasible alternative to the use of land from the Deer Creek Dam Complex.

Minimization of Harm to Section 4(f) Land

The 2002 Preferred Alignment incorporates all possible planning to minimize harm to Section 4(f) resources. Measures to minimize harm to the Deer Creek Reservoir Dam Complex have been established in a Memorandum of Agreement (MOA) (Appendix G of the FSEIS) as part of the Section 106 consultation process under the National Historic Preservation Act. Under the terms of the MOA, the impacts to the Dam Complex will be mitigated by conducting Historic American Engineering Record (HAER) documentation of the site. The level of documentation and specific requirements have been defined through coordination with the Utah State Historic Preservation Office, the Federal Advisory Council on Historic Preservation, and the BOR.

Coordination with the BOR will continue during the final design and construction to further minimize the impacts to the Deer Creek Reservoir Dam Complex while still meeting the BOR's need for seismic stabilization.

TRAIL EXTENSION

The trail extension will not involve the use of any Section 4(f) resources. Therefore, no Section 4(f) approval is needed for this action.

MEASURES TO MINIMIZE HARM

HIGHWAY RECONSTRUCTION

As the Preferred Alternative for this project was developed and reviewed through a lengthy NEPA process, the alignment underwent numerous changes to minimize adverse environmental impacts. The environmental consequences of this project are described in Chapter 4 of the 2003 FSEIS. Potential direct, indirect and cumulative impacts are discussed in Chapter 4.

Many potential impacts have been eliminated or reduced by adjusting the proposed action and/or avoiding sensitive resources. The remaining impacts associated with project construction and operation will be minimized by adhering to the current UDOT standard specifications for road and bridge construction and a variety of project-specific design specifications. The 1989 SEIS included a variety of mitigation measures that have been incorporated here, as appropriate, and additional measures specific to the 2002 Preferred Alignment are listed below by resource.

Portions of the existing US-189 roadway below Canyon Meadows will be used as an access road and will also be used to accommodate the recreational trail. There are currently numerous active small slides along this alignment. The majority of the existing pavement section in this area will be removed and replaced with a thin layer of asphalt pavement. In addition, other grading options (including toe berms) and drainage design measures, as recommended by the 2003 PB Geotechnical Engineering Study and the

2003 Landslide Technology Peer Review, will be evaluated to improve the stability in this area.

UDOT will take steps to implement Context Sensitive Solutions, a UDOT/FHWA initiative to develop designs based on environmental/aesthetic sensitivity to the project. Following are a list of mitigation commitments to be carried out in conjunction with the final design and construction of the project:

Earth Resources

- Reduce risks and anticipate long-term maintenance in the area in the final geotechnical design. Control rock fall during construction and control rock fall for long-term maintenance.

- Evaluate reducing the depth of cuts, the height and weight of fills and balancing cuts and fills in the Hoover Slide area, including the consideration of separated grades, to maintain slope stability at an acceptable factor of safety.

- Evaluate use of deep drainage systems, where feasible, to maintain stability.

- Minimize the use of temporary and permanent cuts to avoid reduction in up-slope stability.

- Evaluate use of lightweight fills to maintain down-slope stability at an acceptable factor of safety.

- Evaluate the use of tiebacks and other retaining systems to stabilize the ground exposed at larger road cuts.

- Perform additional exploration and install instrument monitoring prior to construction to quantify subsurface conditions to refine final design of cuts, fills and retaining systems in the final design.

- Incorporate aesthetically appropriate rock-cut treatments into the design to maintain natural appearance to the extent possible. Include qualified landscape architect input to soil shaping and rock-cut designs.

- Minimize risk to the public during high avalanche and snow slide periods by considering passive avalanche control methodologies, such as snow sheds, starting zone structures, or surface alterations, and a continuation of current avalanche hazard forecasts and active control.

Water Resources

- Obtain a Utah Pollution Discharge Elimination System (UPDES) General Storm Water Discharge Permit. As part of the requirements of the UPDES permit, develop a Storm Water Pollution Prevention Plan (SWPPP) and incorporate it in the final design plans of the project. Also, submit a Notice of Intent to the Utah Department of Environmental Quality, Division of Water Quality, prior to commencing construction.

- Implement Best Management Practices (BMPs) recommended for water-quality protection and erosion control in the *Provo Canyon Scenic Byway Corridor and Watershed Management Plan* (BIO-WEST et al. 2000), and adhere to UDOT's current specifications for road and bridge construction and to the BMPs discussed under Water Resources in this chapter. Best management practices provide mitigation techniques to control erosion and sediment. Short-term BMPs will be implemented to deal with construction erosion and sediment generation, and long-term BMPs will be included in the design to control any potential increase in erosion after construction and restoration/revegetation have been completed. Final design plans will ensure implementation of both construction and post-construction BMPs (i.e., erosion and sediment control) such that net increases in sediment yield will be minimal.

- Include a comprehensive SWPPP that entails various forms of runoff management and surface protection (for example: silt fence, straw bale barriers, protected ditches, sediment traps, erosion blankets), along with adequate inspection and maintenance of BMPs with active construction BMPs.

- Include prompt and successful revegetation of all slopes under 50 percent (1 vertical to 2 horizontal) where practicable and rock-lined grass swales to slow water and filter sediment, permanent sediment traps, etc., with long-term BMPs. Proper removal and disposal of detained sediment will also be included in long-term BMPs.

- Relocate the new highway near Little Deer Creek to the north, and remove the existing fill and culvert. A new fill slope and culvert have already been constructed north of the existing highway. Restore Little Deer Creek from the outlet of the new culvert to the Provo River.

Vegetation and Wildlife

Section 7 consultation for the project has been completed, and the U.S. Fish and Wildlife Service has concurred with FHWA that the project is not likely to adversely affect threatened and endangered species and critical habitat.

- Develop an appropriate landscaping and revegetation plan as part of the highway design.

- Emphasize use of native species.

- Minimize areas of disturbance in all roadway sections to reduce the potential for noxious weed invasion through implementation of the UDOT Special Provision on Invasive Weed Control. Ensure that methods to control noxious weeds are implemented before seeding, per UDOT's current standard specifications for road and bridge construction.

- Revegetate at the earliest possible date all disturbed areas not occupied by project facilities. This will stabilize disturbed soils, minimize erosion, and enhance the productivity and aesthetics of the disturbed areas. Revegetate using UDOT approved seeding methods. Coordinate the revegetation effort with the project landscaping plans.

- Revegetate in conjunction with erosion control. Protect exposed soil from erosion; if mulch is applied, use only certified weed-free straw or hay, with certification of a weed-free source from the county extension agent for the county in which the hay or straw is grown.

- Develop and implement a monitoring program that would ensure revegetation and landscaping success.

- Install deer-proof fencing where necessary in coordination with the Utah Division of Wildlife Resources (UDWR).

- Construct big game crossings at or just east of the main entrance to Deer Creek State Park, at the Wallsburg turnoff, and in the vicinity of Macafee Hill.

- Minimize disturbance of the cottonwood trees between Wildwood and Deer Creek Dam used by bald eagles for winter roosting. Monitor these areas for bald eagle winter roosting use and coordinate the results and any construction constraints with the USFWS prior to any winter construction. Do not remove large cottonwoods or any other snag trees unless absolutely necessary.

- Conduct golden eagle nest surveys throughout the entire Wildwood to Deer Creek State Park Segment immediately prior to construction. Coordinate the results of the surveys and any construction constraints with the USFWS prior to construction.

- Avoid destruction of riparian and wetland habitats beyond that necessary for careful construction and actual highway placement. No structures or facilities will be placed in the river. Replace loss of wetland habitats according to Section 404 permitting obligations. Construct retaining walls to minimize indirect effects to habitats along the river. Avoid impacts to the river bank for at least 2.44 meters

(8 feet) from the river's edge to prevent impacts to the river otter (*Lutra canadensis*).

- Conduct early springtime, pre-construction Columbia spotted frog (*Rana luteiventris*) surveys of any project Area wetlands that are suitable habitat and would be impacted by construction. Provide survey results to the UDWR (Central Region) and the USFWS.

Wetlands

- Construct the remaining portion of the Deer Creek restoration site (0.53 hectare [1.3 acres]) as part of the Wildwood to Deer Creek State Park project. The portion of the Deer Creek restoration site that has already been created (0.28 hectare [0.70 acre]) provides stream channel and riparian mitigation, but it does not provide wetland mitigation. Anticipated wetland impacts from the Wildwood to Deer Creek State Park Segment of the Project were permitted previously by the U.S. Department of the Army, Corps of Engineers (Corps) (Permit No. 199450024) and have been mitigated at the wetland mitigation site (Bullock property) included in the Upper Falls to Wildwood Segment mitigation. Monitoring of the site will continue in accordance with the permit.

- Maintain the 2.44-meter (8-foot) buffer between the ordinary high water mark of the Provo River and any construction disturbance as specified in the Corps permit.

- The previous Section 404 permit noted above has expired and a new permit will be obtained prior to construction.

Fisheries

- Take measures to minimize sediment entering the Provo River or its tributaries (see discussion under Water Resources above).

- Implement construction procedures that minimize silt production, especially during fish spawning and brooding seasons.

- Establish staging areas only outside riparian zones. Require protection against spills or other disturbances. Require the construction contractor to dispose of construction contaminants such as oil, fuel, and chemicals outside the canyon in accordance with all pertinent laws and regulations.

- Construct retaining walls where required to minimize roadway impacts to the river and fish habitat.

- Mitigate the new fill embankment-related loss of trout habitat in Little Deer Creek by completing restoration between existing US-189 and the Provo River as follows:

    - Increase instream cover for resting, hiding, and shelter to 10 percent in the 128- meter (420-foot) reach of Deer Creek below the highway (resulting in an increase of 46 trout Habitat Units in Deer Creek) by (1) regrading and planting banks with willows, dogwoods, or other perennial macrophytic shrubs; and (2) installing structures designed to provide cover for trout, such as cabled trees and logs or boulder clusters.

    - Increase the length of Deer Creek by restoring the section of stream that is currently in culvert under the existing highway and realigning the channel to include several meandering bends between the culvert outlet of the proposed highway alignment and the Provo River. An increase in length of 100 meters (330 feet) of channel with comparable habitat quality will result in a 1:1 replacement of stream impacted by the proposed highway alignment.

    - Modify the existing culvert beneath the Heber Valley Historic Railroad crossing of Deer Creek to provide passage for trout and access to areas upstream for spawning. The new culvert in place over Deer Creek for the 2002 Preferred Alignment was designed to provide passage for adult trout that utilize Little Deer Creek for spawning.

Land Use

The 2003 FSEIS concludes that cumulative impacts to land use from construction of the Preferred Alternative would include only incremental adverse loss and encroachment into open spaces within the project area. In addition, the 2003 FSEIS examined the potential cumulative impacts from additional residential development and other development beyond the project area, and concluded that these impacts will be largely controlled and mitigated by the current restrictive local land use plans, zoning controls, and developmental requirements of Wasatch County.

- Minimize impacts to current land uses through coordination between UDOT and BOR, Wasatch County, and area utilities.

Visual Resources

- Mitigate visual impacts resulting from the Preferred Alternative as described in the 1989 SEIS:

    - Minimize clear zone widths and align the highway as far from the Provo River and Deer Creek Reservoir as possible.

- Provide turnouts and parking at scenic locations and recreation areas.

- Incorporate aesthetically appropriate rock-cut treatments into design to maintain natural appearance to the extent possible. Include qualified landscape architect input to soil shaping and rock-cut designs.

- Incorporate detailed landscaping and revegetation plans in the project design. Revegetate soil cut slopes and embankments with native species.

- Coordinate closely with canyon residents and users to minimize visual impacts, including landscape screening between the pond and residents of the Canyon Meadows Development.

Recreation Resources

- Revegetate cut and fill slopes to soften visual scars of highway construction. Plant landscape screenings along key locations of the route to reduce visual impacts to recreationists.

- Provide left-turn, acceleration, and deceleration lanes at major recreational facilities as appropriate.

- Provide recreation and fishing access at the base of Deer Creek Dam in coordination with BOR, Provo River Water Users Association, and appropriate agencies. Consider location of restroom facilities near recreational areas.

- Plan and design the recreational trail to enhance canyon use by the public.

Socio-economics

- Implement measures inherent in FHWA's and UDOT's policy of compensation for Right of Way acquisition to alleviate the primary socio-economic concerns of landowners.

- Adhere to Federal and State relocation policies to provide necessary compensation to land owners.

- Minimize disruption to the traveling public during construction with traffic control planning and operations.

- Install appropriate landscaping and vegetation adjacent to road to screen road from existing residential uses.

Cultural Resources

- FHWA, the Utah State Historic Preservation Officer, UDOT, and BOR signed a Section 106 Memorandum of Agreement (MOA) for the project. The MOA is included as Appendix G of the FSEIS.

Noise

- Minimize construction noise through the application of noise-abatement measures contained in UDOT's current standard specifications for road and bridge construction. All contractors involved in construction activities will be required to adhere to these measures.

Air Quality

- Implement UDOT standard fugitive dust control measures during all construction activities.

TRAIL EXTENSION

As discussed in the 2003 FSEIS, the Trail will be designed and constructed on existing roads with no new disturbances to avoid/minimize any impacts from its implementation.

MONITORING OR ENFORCEMENT PROGRAM

A variety of monitoring and enforcement measures to minimize harm during construction will be implemented for both the highway reconstruction and the trail extension:

- The mitigation measures listed above will be incorporated into the construction contract, plans, and specifications and will be monitored in accordance with a construction monitoring plan developed to include all monitoring commitments in this ROD and those required to comply with specific permits.

- The UDOT Region 3 Project Engineer, who will have the authority to enforce adherence to these measures, will supervise construction activities.

- An independent environmental consultant will monitor mitigation commitments during construction, in coordination with the Project Engineer.

- The existing Project Cooperating Advisory Team will continue to meet during the design and construction of the project to provide input on mitigative treatments, enhancement opportunities, and overall design content; and to transmit project information to their constituents.

- The Utah Division of FHWA is responsible for administering the Federal-Aid Highway Program in Utah and will make periodic inspections of all phases of highway design and construction to assure compliance with federal requirements including those of the National Environmental Policy Act.

COMMENTS ON THE FSEIS

A total of 15 comment letters were received on the 2003 FSEIS. A complete set of all the comments is available for review at the UDOT Region 3 office at 658 North 1500 West in Orem, Utah, or at the UDOT Environmental Division, 4501 South 2700 West in Salt Lake City, Utah. The only federal, state, or local government entity providing comment was the Utah Division of Wildlife Resources, who simply noted their continued active involvement as the project has developed and reported that their concerns had been adequately addressed in the 2003 FSEIS.

The remaining comments were received from the Sierra Club, Save Our Canyons, and Canyon Meadows residents or their representatives and were directed at Canyon Meadows issues, in addition to several broader concerns. The majority of comments received were the same as or similar to those received from many of the same individuals in response to the Draft SEIS. In general, the comments focused on the areas of geotechnical stability, quality of life (noise, aesthetics, wildlife presence, etc.), and safety/access. Two comment letters, one from the Canyon Meadows Homeowners Association representative and the other from their legal counsel, addressed these and other issues in considerable detail. Appendix A to this document addresses all substantive issues raised in the comments.

Many of the specific items raised in the comments will be addressed in greater detail during final design of the project. Continued public involvement and agency coordination will occur during design and construction and the Cooperating Advisory Team will continue to meet regularly to receive and give input as to the design process and construction activities.

CONCLUSION

The FHWA has determined that the Preferred Alternative, for improvements to U.S. Highway 189 between Wildwood and Deer Creek State Park, best meets the transportation needs for Provo Canyon Corridor, while considering the environmental, safety and socioeconomic considerations. This decision is based on the 2003 FSEIS, public comments and the entire administrative record. This project is intended to provide a transportation facility that accommodates safe and efficient movement of people and goods through the traffic design year.

Following extensive study and evaluation, it was concluded that the No-Build, the out of canyon alternatives, and/or three-lane alternatives would not provide the capacity or desired safety improvements to meet the future travel demand. The 2003 FSEIS also

concludes that cumulative impacts to land use from construction of the 2002 Preferred Alternative would include only incremental adverse loss and encroachment into open spaces within the project area. In addition, the 2003 FSEIS examined the potential cumulative impacts from additional residential development and other development beyond the project area, and concluded that these impacts will be largely controlled and mitigated by the current restrictive local land use plans, zoning controls, and developmental requirements of Wasatch County.

Based upon consideration of the need for safe and efficient transportation as well as the social, economic and environmental impacts of the 2002 Preferred Alternative, FHWA has determined that it is in the best overall public interest to proceed with this project. The 2003 FSEIS discloses the associated impacts with the Preferred Alternative and demonstrates that the Preferred Alternative for US-189 provides additional traffic capacity in an alignment that balances and minimizes the environmental, economic, and social concerns associated with highway construction.

In reaching our decision, the FHWA has considered all of the issues raised in the FSEIS administrative record and the previous EIS and SEIS. Additionally, the FHWA has consulted with other Federal and State agencies during this process. A full list of interagency coordination is included in the 2003 FSEIS.

The 2002 Preferred Alternative was developed through a public process that included project adjustments to avoid and minimize environmental impacts. The Preferred Alternative that resulted from this process includes significant mitigation elements to compensate for unavoidable impacts. Thus, based on our independent review and oversight of the SEIS process, the FHWA approves the selection of the 2002 Preferred Alternative for the US-189 Project. The FHWA also approves the selection of the Preferred Alternative for the extension of the Provo-Jordan Trail, as described in the FSEIS.

By /David C. Gibbs/ Date 10/24/03

David C. Gibbs, P.E.
Division Administrator
Federal Highway Administration
Utah Division
Salt Lake City, Utah

PROVO CANYON US-189
RECORD OF DECISION – APPENDIX A
RESPONSES TO COMMENTS ON FINAL SEIS

I. CONSISTENCY WITH SETTLEMENT AGREEMENT

Comment:

One comment contends that the scope of the Supplemental Environmental Impact Statement (SEIS) is inconsistent with UDOT's commitment, in a Stipulation dated November 20, 1998, to prepare an SEIS that considers the entire project from I-15 to US 40. The comment contends that the language in the Stipulation required FHWA and UDOT "go back to the National Environmental Policy Act (NEPA) process as it existed in 1989 for the whole project area and revisit it in depth." (Appel)

Response:

The Final Supplemental Environmental Impact Statement (FSEIS) complies with the November 19, 1998 Stipulation and the Order for Dismissal entered by the Court on November 20, 1998, both of which represented the terms of dismissal of litigation regarding a previous segment (Upper Falls to Wildwood) of the Provo Canyon Improvement Project (Project). Provo River Coalition, et al. v. Pẽna, et al., Case No. 2:96CV0186C (dismissed Nov. 20, 1998). The FSEIS complies with the Stipulation because:

- the Stipulation and Order, when read together, require an SEIS to be prepared for *further phases* of the Project, not for the completed sections;

- the Stipulation and Order require a *Supplemental* EIS, which involves an examination of significant changes to the project or significant new information or changed circumstances; they do not require an entirely new EIS; and

- the FSEIS included an examination of the issues that warranted a project-wide analysis, including the need for a four-lane highway, the potential for induced traffic, and the potential for induced development.

SEIS for Further Phases of Construction

First, as stated by the Court in its order dismissing the litigation, the Stipulation required that an SEIS be prepared for the *uncompleted portions* of the Project. The Court's order states that:

> Based on the parties' Stipulation and the representations of the Utah Department of Transportation concerning the Department's *commitment to*

> *perform a Supplemental Environmental Impact Statement* under the National Environmental Policy Act ("NEPA") *on all further phases of construction for "the project" as defined in the stipulation* (U.S. Highway 189), this Court enters its order dismissing Plaintiff's Complaint. [emphasis added]

At the time the Court issued this order, the Project as a whole had been divided into four segments: (1) Murdock Diversion to Upper Falls; (2) Upper Falls to Wildwood; (3) Wildwood to Deer Creek State Park; and (4) Deer Creek State Park to Heber City. The first segment had already been completed, and the second segment was under construction and was not halted by the litigation. Thus, the words "further phases" in the Court's order refer to the third and fourth segments of the Project – namely, Wildwood to Deer Creek State Park, and Deer Creek State Park to Heber City.

Therefore, when the 1998 Stipulation and the Court's order of dismissal are read together, it is clear that UDOT's commitment was to prepare an SEIS on the uncompleted portions of the Project. UDOT has fulfilled that commitment by preparing an SEIS for the portions of the Project between the Utah/Wasatch County line (at Wildwood) and US 40 at Heber City. There is no basis under the 1998 Stipulation for requiring a reexamination of alternatives to, or impacts of, the portions of the Project that have already been completed.

SEIS not a New EIS

Furthermore, the 1998 Stipulation required preparation of a Supplemental EIS, not an entirely new EIS. The purpose of an SEIS is to examine changes in a proposed action or significant new circumstances or information (23 C.F.R. § 771.130(a); 42 C.F.R. 1502.9(c)). In this case, the FSEIS was prepared primarily to evaluate potential changes in the alignment for the uncompleted Wildwood to Deer Creek State Park segment of the Project. The study involved extensive updating of previous studies, including previous traffic and environmental data. This approach complied with FHWA and Council on Environmental Quality (CEQ) regulations governing the preparation of an SEIS.

SEIS Considered Project-Wide Issues

Lastly, it is important to recognize that the FSEIS considered traffic patterns and environmental impacts on a project-wide scope where appropriate, including the following:

- The FSEIS included an updated traffic study for US-189 between I-15 and US 40. This updated study, completed by Fehr & Peers, re-assessed the need for further improvements to US-189 and confirmed the conclusion reached in the 1989 SEIS – namely, that US-189 must be upgraded to a four-lane highway in order to meet safety and capacity needs. This study was completed early in the development of the FSEIS and supported the decision to focus the FSEIS on alternatives for upgrading US-189 to four lanes.

- The FSEIS also considered the potential for increased traffic on US-189 resulting from completion of the entire Project. The FSEIS noted that even when the Project is completed, US-189 would not provide a continuous four-lane Interstate-quality connection between I-15 and I-80. Rather, traffic seeking to use US-189 as a shortcut between I-15 and I-80 would need to travel on at-grade city streets (with signalized intersections) in both Orem and Heber, at each end of US-189. Given the lack of a fully access-controlled connection, the Fehr & Peers study found that full completion of the Project would result in only a small amount of "induced traffic" on US-189.

- The FSEIS considered the potential for induced growth (additional development) resulting from completion of the entire Project. This analysis considered the potential for induced growth in Provo Canyon – including the potential for full build-out of the Canyon Meadows development – as well as the potential for induced growth outside Provo Canyon.

In summary, the scope of analysis in the FSEIS was consistent with the terms of the Stipulation and Order, as well as with the requirements of NEPA.

II. ALTERNATIVES ANALYSIS

A. Range of Alternatives

Comment:

One comment contends that additional analysis should be performed of alternatives that would avoid the upgrading of US-189 to a four-lane highway through the Canyon, including three-lane and out-of-canyon alternatives. (Appel, Lyons)

Response:

As explained in the SEIS, the needs analysis for this Provo Canyon Improvement Project concluded that four lanes of capacity are needed on US-189 through the Provo Canyon in order to accommodate existing and forecasted traffic volumes at an acceptable level of service and safety. The need for four lanes of capacity on US-189 was first established in the 1989 SEIS. This issue was re-examined in a traffic study conducted in 2000 as part of this SEIS. The updated traffic study reaffirmed that there is a need for four lanes of capacity on US-189.

Based on this needs analysis, the only reasonable alternatives for this Project are alternatives that will result in four lanes of capacity on US-189 through Provo Canyon. All other "build" alternatives, including those suggested by the comment, are unreasonable and therefore do not require detailed study. For these "build" alternatives, the only requirement under NEPA is to provide a brief explanation in the EIS of the reasons that the alternatives were eliminated from consideration. (The No-Build

alternative must be studied in all cases, without regard to its ability to meet purpose and need.)

The current SEIS satisfies these requirements as follows:

- Three-lane alternatives were considered in the DSEIS at p.1-13. As explained there, three-lane alternatives would not provide sufficient capacity to meet the Project's purpose and need. The discussion of three-lane alternatives was expanded in the FSEIS at p. 1-14, 1-15, and 2-13 in response to Environmental Protection Agency's (EPA) comments on the DSEIS.

- The No-Build alternative is considered in the current SEIS in two ways. First, the Purpose and Need chapter describes the traffic conditions that would exist in the future under the No Build condition. See FSEIS, Table 1-1 and pp. 1-10 to 1-13. Secondly, the Environmental Consequences chapter summarizes the environmental impacts of the No Build alternative. See FSEIS, Table 4-20. This analysis is sufficient to inform decision-makers and the public of the consequences of selecting the No-Build alternative.

- A full range of "out of canyon" alternatives were identified and evaluated in the 1978 EIS and included the study of routes through American Fork, Diamond Fork/ Spanish Fork, and Hobble Creek Canyons. The EIS explained that the Diamond Fork and Hobble Creek corridors were not prudent alternatives due to summit elevations of near 8000 feet, rugged mountain terrain, and additional corridor lengths of 13 and 16 miles, respectively, which impose difficult and expensive construction solutions (estimated to be more than 4 times as expensive as the Provo Corridor). The EIS also explained that the American Fork alternative would be 10 miles longer in length and estimated that construction on this alignment would be 2 1/2 times as expensive as the Provo Corridor. Additionally, the EIS concluded that the selection of any of these "out of canyon" corridors would result in higher ecological impacts. For these reasons, these "out of the canyon" alternatives were not selected for additional evaluation and consideration.

  These "out of canyon" alternatives remain unreasonable and imprudent due to the reasons stated above, especially the additional length of the corridors and the potential magnitude of the environmental impacts to these other canyons, which have only experienced limited development. There are no parallel alternative routes within this area that would accommodate the projected traffic volumes. Additionally, the geography of the area does not allow a viable alternative to move traffic through this canyon or through another canyon, and the traffic data clearly indicates the need to improve US-189 in Provo Canyon. Travelers desiring to travel from Provo/Orem to Heber, east on US-40, or to area recreational opportunities in the area or from Heber to Provo/Orem will continue to use existing US-189 (the shortest route) as a major travel corridor. Accordingly, the consideration of "out of canyon" alternatives does not meet a

key component of the Project's purpose and need, which is to eliminate existing hazardous driving conditions and to provide a facility that has the capacity to safely accommodate projected future traffic.

- The "out-of canyon" alternatives (as described by Mr. Appel's comment) involves unspecified efforts to divert traffic, particularly truck traffic, to other routes, with the goal of diverting sufficient traffic off US-189 to eliminate the need for four lanes of capacity on that route. The option of banning truck traffic from US-189 was thoroughly considered in a study prepared by UDOT in May 1991. According to the study, it is not possible to divert a sufficient number of trucks to significantly reduce overall traffic volumes, and any attempt to divert trucks to other routes would greatly increase travel times and vehicle operating costs for the diverted trucks. The truck study also reported that the majority of the truck traffic on US-189 originates and/or has destinations within Utah. This information further supported the finding in the1990 SEIS of a need for four lanes of capacity on US-189. The findings of this 1991 truck study are also consistent with 1994 Centennial and the 2000 Fehr and Peers traffic analysis.

Comment

One comment contends that the SEIS should include additional consideration of "combinations of other In-Canyon alternatives, such as stabilization of the Hoover Slide and construction of the road without bridges." (Appel)

Response:

There is no feasible means for "stabilizing" the Hoover slide as a whole to prevent future slides (see detailed response to Comment III.A.3 below), nor, as determined in the 1989 SEIS, is there any feasible means of upgrading US-189 as a four-lane highway through the canyon without bridges. Thus, the combinations proposed by the comment are not reasonable and do not warrant additional study.

Comment:

One comment contends that the SEIS should have considered a variant of the 1989 SEIS Preferred Alignment; the variant would involve the elimination of the bridge at Horseshoe Bend and a reduction in design speed in that location to 45 mph. (Orvis)

Response:

As referenced in Appendix D (p. 5 &16) of the current FSEIS, an alternative at Horseshoe Bend without a bridge and a reduced design speed was considered during the 1994 Value Engineering study and Additional Alignment Alternatives and Issues Summary Report and eliminated from further consideration on the basis of safety, level of service, and functionality. The 1989 SEIS Alternative (see 1989 SEIS, p. 2-4) included a design speed of 50 miles per hour on the basis of improved safety and

"consistent geometric features that meet drivers' expectations and allow for uniform operating speeds." Since the two previous segments of the Project were built to this design speed, FHWA is reluctant to vary design speeds within this highway corridor for the above noted reasons. Accordingly, a 50 miles per hour (mph) design speed has been established as the appropriate standard for the Project.

Additionally, after the end of the FSEIS comment period, the engineering designers (Parsons Brinkerhoff (PB)) were requested to take a further look at design speed in the Horseshoe Bend area. The engineers determined that even with a reduction in design speed to 45 mph in the vicinity of Horseshoe Bend, it would not be possible to remain on the existing US 189 alignment; instead, it would be necessary to diverge away from the existing alignment, toward the west, resulting in large excavations into the mountainside, which would create extensive additional impacts and geotechnical problems, since the cut would be located at the toe of the Hoover Slide. The additional analysis by the engineering designers also concluded that further reductions in the design speed (to 40 mph) would allow the highway to remain on the existing location, but would likely create an unsafe section of roadway and therefore would not conform to the project's purpose and need. The results of this analysis are contained in a memorandum from PB dated July 7, 2003, which is included in the project file.

B. Information and Assumptions Used in Alternatives Analysis

Comment:

One comment contends that the current SEIS is based on outdated assumptions and outdated information about the alternatives. The comment also contends that the environmental analysis is based on outdated environmental information from the 1989 SEIS. The comment mentions "significant changes in land use aspects" in Utah and Wasatch counties. (Appel)

Response:

The 1989 SEIS provided the starting point for developing this current SEIS, but this SEIS did not blindly rely on information from the 1989 document. In fact, numerous studies were completed after the 1989 SEIS was published, and the results of those studies were incorporated into the current SEIS. These additional studies are described in the Alternatives Chapter of the current SEIS at pp. 2-5 to 2-10. Highlights of these studies include the following:

- Updated traffic studies were completed in 2000. These studies re-assessed the need for the remaining sections of the Project, and confirmed that there is still a need for a four-lane highway through the canyon. The results of this study are presented in the SEIS.

- Updated geotechnical studies of the Hoover Slide area were completed in 1995 by Parsons Brinckerhoff (PB). The Preferred Alignment was independently

reviewed in 2001 by Landslide Technology, who evaluated alternatives in terms of their potential to affect the stability of the Hoover Slide. The results of those studies are included in the SEIS. In addition, Parsons Brinckerhoff has conducted extensive further data collection and analysis as a part of their preliminary design efforts and in response to public comments. The results of these efforts are presented in their Geotechnical Report dated August 2003. Also, Landslide Technology completed a second independent peer review of this report.

- Value engineering (VE) studies were completed in 1995 and again in 2000. The 1995 VE study, in particular, involved an in-depth analysis of alternative routings for the Project in the Hoover Slide area. The results of the VE studies are summarized in the SEIS.

- An avalanche study completed in 2001 evaluated various means for protecting the roadway and motorists against the impacts of an avalanche. The results of the avalanche study are summarized in the SEIS.

- The existing environment and environmental consequences data has been comprehensively reviewed and updated where necessary. In particular, on the issue of land use, the SEIS discusses the recent changes in land use policy in Wasatch County (which may have been the "significant changes in land use aspects" to which the comment referred). In fact, the SEIS includes a map of the new Wasatch County zoning map and a copy of the new zoning ordinance, which imposes more restrictive conditions on development in the Canyon and elsewhere in the County.

In summary, the SEIS reflects current information about the purpose and need for the Project, about the alternatives, and about their impacts. This information is sufficient to satisfy the requirements of NEPA.

C. Consideration of Connected and Similar Actions

Comment:

One comment contends that further analysis is needed of "connected" or "similar" actions - in particular, (1) the widening of I-15 in Utah County; (2) the 800 North improvements that are currently under consideration; and (3) the Deer Creek State Park to Heber segment of the Project. (Appel)

Response:

The 800 North and I-15 improvements are independent of the Project examined in this FSEIS, and thus are not connected actions for purposes of this study. Instead, these projects are properly studied as part of the cumulative impacts analysis, as was done in this FSEIS. Additional details regarding these two projects are provided below, together

with further explanation of the Deer Creek State Park to Heber City Segment of the Project.

800 North Improvements

- As noted in the SEIS, the original Provo Canyon Improvement Project included improvements to 800 North (State Route 52 from I-15 to US-189). Those improvements were completed from 1984 to 1986 under the original 1978 EIS. Thus, the Project is complete along 800 North.

- Several years ago, UDOT included additional improvements on 800 North in the State Transportation Improvement Plan to address local traffic congestion. Although project plans are still being developed, UDOT anticipates that the 800 North project will include an additional traffic lane each way from approximately 400 West to 1000 East, improvements to the existing bridge at the junction with US-189 near the canyon mouth, and the relocation of the frontage road near the I-15 interchange. The environmental document will be a State environmental study, and the study is expected to be finalized in the fall of 2003, with construction planned in several phases in 2004 and 2005 or later.

- The currently proposed improvements to 800 North are not part of the Project. UDOT is pursuing those improvements as an independent, non-Federal project, which will be constructed entirely with State funds and will not require any FHWA approval. These improvements to 800 North will primarily serve local traffic in Orem. According to UDOT traffic data, 70 % of the traffic on 800 North is local traffic that starts or ends in Orem.

- With the proposed improvements, 800 North will remain an at-grade urban arterial with traffic lights at the intersections. It will not become an access-controlled facility. Thus, even when the improvements to 800 North are completed, there will be no access-controlled connection between I-15 and US-189. Thus, the completion of the 800 North improvements will not increase the potential for US-189 to become a shortcut for traffic movements between I-15 and I-80.

I-15 Improvements

- I-15 serves as a major north-south connection not only for Utah County, but also for the entire state of Utah as the major access to the Salt Lake City area from the south. It also serves the country as part of the nationwide Interstate Highway System and is a major north-south connection through California, Nevada, Utah, Idaho, and Montana and is a designated trade route between Canada, the United States, and Mexico.

- Due to heavy traffic on I-15 in Utah County, a planning study titled, “Utah County I-15 Corridor Management Plan”, was published in August of 2002 as a collaborative effort among UDOT, Mountainland Association of Government, and Utah Transit Authority. The scope of the study was designed to identify transportation needs within Utah County along the I-15 corridor and to develop a management plan for the expected needs within the planning time frame of the year 2030. According to the corridor management plan, Utah County is expected to grow by 84% over the next thirty years and traffic is expected to double by then.

- In order to accommodate the projected growth, the 2002 corridor management plan recommends the widening of I-15 to eight general-purpose lanes through most of Utah County and two HOV lanes from Orem to Salt Lake County. It also recommends the construction of as many as five new interchanges, and the reconstruction/improvement of most of the existing interchanges. All of this work is recommended for completion by 2030. In order to accomplish this objective, the management plan recommends the initiation of an EIS, as well as, getting funding commitments in place. As of this date, there is no funding identified to do any construction.

- As discussed in the FSEIS, the improvements to US-189 may result in the diversion of a small number of trips from I-15, but US-189 will primarily serve local trips between the Orem and Heber City areas, and the vast majority of I-15 traffic will remain on I-15. Thus, the improvements to I-15 are independent of the improvements to US-189.

For these reasons, improvements to 800 North and I-15 are independent of the improvements to US-189, and therefore are not “connected actions” for purposes of NEPA. Rather, these improvements are independent actions that have the potential to cause cumulative impacts, and for that reason their impacts are discussed in the cumulative impacts section of the FSEIS.

Deer Creek State Park to Heber Segment

The improvements to the Deer Creek State Park to Heber section of US-189 are a part of the Project and have been considered as such in the FSEIS. There are no plans to proceed with this Segment at this time, because no funding for this segment is available. Furthermore, there are no known issues in this Segment that requires reconsideration of the alignment selected in the 1989 SEIS. Therefore, the FSEIS provides an update on the environmental issues associated with the Segment for disclosure purposes. Before construction of this Segment proceeds, an additional SEIS will be prepared, which will provide additional opportunities for public involvement and agency coordination. No final action is being taken on the Deer Creek State Park to Heber City Segment at this time.

III. IMPACT ANALYSES

A. Direct Impacts

1. Water Quality

Comment:

One comment contends that additional analysis is needed of impacts on water quality. In particular, the comment contends that the SEIS does not provide sufficient information on existing water quality and does not establish that the proposed Best Management Practices will be effective. (Appel)

Response:

As noted above, this document is a limited-scope analysis that is directed at an evaluation of changes since the previous SEIS was published. In accordance with that approach, water quality data from the 1989 SEIS was reviewed to determine whether any significant changes had occurred. Based on the 2000 Watershed Management Plan (which is readily available and does contain current data), it was determined that no significant changes in water quality have occurred.

The analysis of water quality impacts in the current SEIS is based on existing water quality data (from the year 2000), not on water quality data from the 1989 SEIS. Data for the year 2000 was taken from the 2000 Watershed Management Plan for the Provo River. Please refer to Tables 4-2, 4-3, 4-4, and 4-5, 4-6, 4-8, 4-9, and 4-10. All of these tables estimate water quality impacts by comparison to existing conditions. The existing conditions referenced in these tables are conditions in the year 2000, not 1989.

UDOT recently (May 2003) initiated its preconstruction baseline water quality-sampling program to provide a base for its intended construction and post-construction monitoring program. Although only interim results are currently available, the results are not significantly different from those of 1989 or 2000.

The SEIS does not rely on “undefined and speculative measures” in reaching its conclusions regarding water quality. In fact, the SEIS relies on “state of the knowledge” performance efficiencies of specific Best Management Practices (BMPs) that will be used to protect water quality and improve runoff conditions from the project area. The document explains in detail the methods used to estimate BMP efficiencies applicable to the mountainous terrain of Provo Canyon, and describes the site-specific analyses and evaluations used to develop actual loading calculations based on the anticipated extent of disturbance and associated sediment delivery rates. See FSEIS, pp. 4-7 to 4-16.

As noted by the comment, the SEIS does not give the exact types and locations of BMPs. This information was not provided because it cannot be known until a final

physical design of the roadway is completed, which occurs only after completion of the NEPA process. However, while specific design details are not presented, the SEIS does specifically list the types of BMPs that will be implemented and provides a description of each BMP. See pp. 4-11 to 4-16. This level of detail regarding BMPs is consistent with the usual practice for describing mitigation measures in a NEPA document. It also should be noted that compliance with the mitigation measures listed in the SEIS, including all BMPs, will be included as a binding commitment by UDOT in the project agreement between FHWA and UDOT for this project. Thus, compliance with the BMP commitments will be legally enforceable by FHWA.

The design package for construction of the project will be finalized after the completion of the NEPA process. The design package will include full details of drainage management and erosion control measures. As discussed in the Mitigation Measures section of the SEIS (pp. 4-62 to 4-63), the project's Storm water Pollution Prevention Program (SWP3) will include appropriate inspection and monitoring processes (weekly during construction, during storm events, and monthly after construction) to be provided by an independent expert. The responsible state and federal agencies will review the SWP3 and participate in the monitoring and inspection effort.

Based upon the conservative estimates of BMP efficiencies, the site-specific determinations of loading and delivery potential within the project area, and the regulatory-required monitoring and inspections; the available information strongly indicates that the project will result in a net decrease in sediment loading (given the current disturbed conditions of the project area and absence of BMPs) and thus should result in an improvement in associated water quality. Available literature on this subject supports these findings where erosion and sediment control BMPs are applied to previously disturbed areas without controls.

2. Endangered Species

Comment:

One comment contends that further analysis is needed of impacts on endangered species - in particular, the endangered June sucker. (Appel)

Response:

Endangered species were fully and adequately covered in the SEIS document. Chapter 4 of the document addresses potential concerns and impacts anticipated for all listed species. Potential impacts to the June sucker in the project area and elsewhere in the watershed are addressed on page 4-29 of the FSEIS.

Detailed coordination with the U.S. Fish & Wildlife Service (USFWS), the responsible federal agency, occurred throughout the development of the SEIS in accordance with Section 7 of the Endangered Species Act (ESA). By letter dated February 27, 2003, the FHWA requested concurrence by the USFWS in a finding that the project is "not likely to

adversely affect" any threatened or endangered species (specifically including the June sucker). By letter dated March 13, 2003, the USFWS concurred in this finding. This letter from the USFWS concluded the consultation process with the U.S. Fish and Wildlife Service for the project and satisfied the requirements of Section 7 of the ESA.

In addition, it should be noted that in all cases, the 2002 Preferred Alignment results in less impacts to endangered species than would the 1989 SEIS Alignment.

3. Impacts of Design Related Improvements

Comment:

One comment expresses concern about deferring geotechnical issues to the design phase, about a lack of access to design plans, and about the possible use of "design-build" approach, as well as other concerns related to the design phase of the project. (Appel)

Response:

The comment expresses concern about geotechnical issues being "left to the design phase." In fact, geotechnical issues have received a high level of scrutiny during this process. The FSEIS describes the geologically complex conditions in Provo Canyon, particularly in the area known as the Hoover Slide. (FSEIS, p. 3-1 to 3-3). These issues are described in further detail in the technical reports prepared by Parsons Brinckerhoff and Landslide Technologies, Inc., which are referenced in the FSEIS. These reports have been provided to the Canyon Meadows representative by letter dated September 22, 2003. The FSEIS also describes the geotechnical issues associated with highway construction in the Hoover Slide area (FSEIS, p. 4-1 to 4-2) and includes mitigation commitments that specifically require further actions to be taken to address geotechnical issues as part of the design process following completion of the NEPA process (FSEIS, p. 4-62).

As stated in the FSEIS at p. 4-62, the mitigation commitments contained in the FSEIS will ensure ongoing independent oversight and public involvement throughout design and construction of the project. Specific commitments include:

- Continued meetings of the Cooperating Advisory Team (CAT) during design and construction to provide input and to transmit information to their constituents.

- Supervision of all construction activities by a UDOT Project Engineer, who will have the authority to enforce adherence to all mitigation commitments.

- Monitoring of mitigation commitments by an independent environmental consultant, who will work in coordination with the UDOT Project Engineer.

Given these mitigation commitments, as well as the oversight and monitoring requirements that have been established, the design process is expected to result in a project with fewer impacts than were estimated in the FSEIS. In addition, the design process will ensure that the project complies with all applicable highway design standards, including standards for geotechnical stability. For further discussion of geotechnical issues, please see the response to Comment III-A-4 below.

The comment also expressed concern about a lack of public access to design plans. Due to its incomplete and frequently changing content, a complete package of highway design documents has not been publicly released. However, major design concepts and direction have been presented at each CAT meeting since preliminary design was initiated. In addition, design workshops were held for the public on June 11 and June 12, 2003, and a plan set, although not in final form, was presented to the Canyon Meadows community before a design workshop held in Canyon Meadows on June 25, 2003.

The comment also expresses concern about the use of a design-build approach. This project will not proceed under the "design / build" delivery system. There was some preliminary consideration of this possibility (as is customary with all large highway projects) very early in the development of the project, but it was not advanced.

4. The Hoover Slide

Comment:

A number of comments raised concerns related to the stability of slides in the project area. In particular, the comments raise questions about responsibility of UDOT for slides that have previously occurred; potential for highway construction to destabilize the Hoover Slide; and the appearance of conflicting findings by different consultants regarding the best location for a four-lane highway in the vicinity of the Hoover Slide. (Multiple comments)

Response:

As further detailed in the August 2003 Geotechnical Report for the project prepared by Parsons Brinckerhoff, the Hoover Slide is a natural, prehistoric, deep-seated landslide which has been active for at least sixty years based on existing records and likely much longer. Neither UDOT nor any other entity is responsible for either its presence or past activity, and has no control over its future movements. Extensive engineering studies and data collection associated with the project indicate that the landslide problems along existing US-189 in the Hoover Slide area are localized (due to groundwater conditions) and confined to three areas at the toe of the slide below Canyon Meadows.

The PB study further clarifies that the ground west of existing US-189 along the 2002 Preferred Alignment is more stable than that adjacent to the existing highway. In addition, PB contends that landslides would likely occur at the three localized landslide

areas noted above if the highway were to be widened at its present location. At best, attempts to stabilize these three areas to prevent anticipated future instability with a widened roadway would be very problematic and expensive.

As suggested by the comments, the PB study further recommends that upon completion of construction of the new highway, the existing highway be stripped of the majority of its asphalt pavement to reduce surcharge loads and other grading options including toe berms and drainage systems to lower the groundwater table within the marginally stable ground be considered. The project will explore these actions during the final design and construction process. The end result is expected to be a more stable situation along the existing highway. PB notes that they do not anticipate that there will be any failure of the Hoover Slide and associated impact upon the Provo River.

The comments also assert that there are contradictions between the PB report and a separate report by Landslide Technology. In actuality, the Landslide report (Conclusions, page 26) indicates that although there are landslide and stability risks along both the existing highway and the Preferred Alignment, "... the effort to maintain stability along the Preferred Alignment appears to be less costly and less risky." This conclusion was reinforced in Landslide Technology's 2003 independent geotechnical review. Landslide Technology concluded that the Preferred Alignment "is located on a more stable portion of the ancient Hoover slide than the existing US-189 Highway" and that the Preferred Alignment "would decrease the impact of new highway construction (cuts/fills) on ground stability." (Sept. 18, 2003 Report at p.7). Landslide Technology also concluded that providing adequate mitigation for the Preferred alignment would be approximately one-third the cost of providing mitigation along the 1989 SEIS Alignment. Id. The difficult geotechnical issues Landslide Technology lists on page 26 of its 2001 Report for the preferred alignment have been addressed and mitigation measures identified in Landslide Technology's 2003 Report to maintain stability along the preferred alignment are being incorporated into the project design.

It should also be noted that concerns have been expressed by both Wasatch County and a variety of engineering firms as to the consequences of water drainage (septic tank, homeowner irrigation, and domestic use) from the Canyon Meadows development into the Hoover Slide and its subsequent effect on the stability of the slide. The potential risk of these actions on the local stability of the slide is a function of the presence and future growth of the Canyon Meadows development and is independent of the project. According to PB, it is likely that this effect is considerably greater than any posed by the construction and presence of the new highway in its proposed location. However, it is expected that the drainage systems and/or ground stabilization measures to be included in the new highway design will help mitigate this ongoing problem.

5. Canyon Meadows – Noise Impacts

Comment:

Some comments express concern regarding the analysis of noise impacts from the project on Canyon Meadows. In particular, concerns were raised regarding the location of noise receivers and the potential for 70 dBA noise levels in certain areas of the Canyon Meadows development. (Appel, Orvis)

Response:

The 2003 FSEIS (Chapter 4) contains an analysis of the potential noise impacts to sensitive receivers adjacent to the proposed roadway segment between Wildwood and Deer Creek State Park. During the development of this study, previous project noise studies were reviewed and updated with additional highway traffic noise analysis. As part of this analysis, seven sensitive noise receivers were monitored for existing traffic noise levels and design year noise levels were predicted for the 2002 Preferred Alignment. Within the Canyon Meadows Development, the building closest to the Preferred Alignment was selected as the sensitive receiver. Due to concerns about highway traffic noise impacts expressed by Canyon Meadows residents in comments on the DSEIS, additional noise analysis was undertaken in the 2003 FSEIS. This additional analysis included the development of noise contours for the entire platted area of the Canyon Meadows Development in the proximity of the new highway. This information was displayed in FSEIS Figure 4-2 on page 4-43; however, only the portion of the development near the Canyon Meadows office was depicted.

Following the FSEIS, Canyon Meadows residents submitted additional comments expressing concern about traffic noise impacts. To address these concerns, all of the platted lots in the Canyon Meadows Development were included in the noise contour analysis and were geo-referenced to an aerial photograph with the predicted future noise analysis contour results overlaid on the photograph to depict the future noise-level contours relative to the existing platted lots. The results of this additional noise analysis were provided to Canyon Meadows by memorandum dated August 15, 2003. The results indicated that all of the existing platted residential units (receptors) in Canyon Meadows are beyond the predicted future 65 dBA noise-level contour. Also none of receptors experience an increase of noise level greater than 10 dBA. The UDOT Noise Abatement Policy approved by FHWA in June of 2000, requires the consideration of the noise abatement in those instances when predicted noise impacts exceed 65dBA or when the predicated design noise level exceeds the existing noise level by 10 dBA or more. Based on these established policies, none of the Canyon Meadows residential units would experience traffic noise impacts that would require mitigation.

On September 1, 2003, a representative of the Canyon Meadows Development contacted FHWA and requested that the issuance of this ROD be delayed until they could conduct their own noise simulation adjacent to the Canyon Meadows Development. At their request, a FHWA Division Office representative attended the

noise simulation on October 6, 2003 to observe the methodology and results of the simulation. On October 8, 2003, the Canyon Meadows Development noise consultant delivered a written report regarding the noise simulation to the FHWA Division Office.

The written report submitted by Canyon Meadows concluded that, except for the southern end of the development near lot 20A, future noise levels "would fall within acceptable L_{eq} limits." For lot 20A, the printout readings for the four simulations were 64.9, 69.8, 63.3, and 60.9 dBA. This simulation, which was not conducted in accordance with FHWA highway traffic noise prediction methodology (23 CFR 772.17), resulted in noise levels at a single receptor ranging from 60.9 to 69.8 dBA, an almost doubling of perceived sound levels between the low and the high readings.

The FHWA's review of potential traffic noise impacts has included: consideration of the results of the FHWA Traffic Noise Model, which modeled the predicted future noise level at Lot 20A to be below 65 dBA; direct observation of the Canyon Meadows noise simulation by FHWA staff; FHWA staff discussions with the Canyon Meadow noise consultant, FHWA noise experts, and the UDOT noise consultant (who also observed the noise simulation); review of the noise report submitted to FHWA by the Canyon Meadows noise consultant; and consideration of the wide disparity in results for the lot 20A noise receptor.

Based on this comprehensive review, FHWA concludes (1) that the accuracy of the Canyon Meadows simulation is questionable, with the potential for producing readings greater than actual noise levels from the project, because of the simulation methodology used, the short sound measurement intervals (five minutes), and the variability of results; and (2) that any noise increases from the construction of the 2002 Preferred Alignment to Canyon Meadows residents and other identified sensitive noise receptors are not expected to reach a 65 dBA or greater sound level which would require the consideration of noise abatement for Noise Abatement Criteria Activity Category B land uses (23 CFR 772.5(g) and 11(c); and UDOT Noise Abatement Policy, dated April 2000). Consequently, while the additional traffic noise data submitted by Canyon Meadows has been considered, based on UDOT's Noise Abatement Policy, it does not justify the adoption of any additional mitigation measures.

6. Canyon Meadows – Visual Impacts

Comment:

One comment expresses concern about the visual impacts of the highway on the Canyon Meadows development. In particular, the comment expressed concern about the visibility of light from vehicles during the night-time. (Orvis)

Response:

The analysis of visual impacts on Canyon Meadows is included in the Socioeconomics section of the Environmental Consequences chapter, in a subsection entitled "Quality of Life." In that section, the SEIS explains in-depth the concerns raised by Canyon Meadows residents and the efforts by UDOT and FHWA to address those concerns. As noted in that discussion, one of the concerns involved the potential for visual impacts from vehicle headlights. This concern was addressed by providing a visual simulation, which demonstrated that the visibility of the highway from the Canyon Meadows area would be minimal, both during the day and at night. See FSEIS, p. 4-39 and Photo 4-1 and 4-2 on p. 4-67.

In addition, following the receipt of these comments on the FSEIS, UDOT and FHWA provided additional information to Canyon Meadows residents as part of the ongoing effort to address their concerns about potential visual impacts. This additional information was presented at a public workshop held in Canyon Meadows on June 25, 2003. The workshop provided an opportunity for residents of Canyon Meadows to view the visual simulations and discuss them with UDOT representatives and project staff.

The project will coordinate closely with canyon residents and users to minimize visual impacts, including landscape screening between the pond and residents of the Canyon Meadows Development.

7. Canyon Meadows – Wildlife Impacts

Comment:

Some comments expressed concern about the potential impacts of the highway on wildlife in and around the Canyon Meadows subdivision, including deer, elk, turkeys, and foxes, among others. (Orvis, Hoskisson, Hale)

Response:

The SEIS addresses this issue as part of the "Quality of Life": discussion in the Socio-Economic Impacts section in the Environmental Consequences chapter. As stated in the SEIS, the Utah Department of Natural Resources, Division of Fish and Wildlife (UDWR), has been consulted on this issue and believes impacts on large game in the Canyon Meadows area can be addressed by fencing the highway and providing for wildlife crossings. For other wildlife species, the UDWR indicates that impacts should be minimal, although it is likely that there will be some displacement of nesting sandhill cranes and wild turkeys in the Canyon Meadows area. (See UDWR comment letter in FSEIS, Appendix G). The mitigation measures recommended by the UDWR have been incorporated into the project. See FSEIS, p. 4-64.

B. Indirect and Cumulative Impacts

Comment:

One comment contends that additional analysis is needed of the indirect and cumulative impacts of the proposed action. (Appel)

Response:

In the FSEIS, all anticipated indirect impacts are addressed in conjunction with the direct impacts. Relative to the comment on cumulative impacts, the Cumulative Effects section of the SEIS is presented on pages 4-53 through 4-61. Table 4-21 includes the 800 North project, which is further described on page 4-57. As noted in the SEIS, improvements to 800 North were completed from 1984 to 1986 under the original 1978 EIS. A new and separate project to address local traffic congestion on 800 North was included in the State Transportation Improvement Plan several years ago. That project is currently proceeding as an independent, non-Federal project, which will be constructed entirely with State funds and will not require any FHWA approval. An initial public meeting has been held, as well as a variety of meetings with special interest groups along the corridor.

Although project plans are still conceptual, it is anticipated that the 800 North project will include an additional traffic lane each way from approximately 400 West to 1000 East, improvements to the existing bridge at the junction with US-189 near the canyon mouth, and the relocation of the frontage road near the I-15 interchange. The environmental document will be a state environmental study, expected to be finalized in the fall of 2003, with construction planned in several phases in 2004 and 2005 or later. The project has been programmed and will be completed independent of any further work on US-189 in the canyon, and is focused at addressing several local traffic needs. As a result, it is addressed in the SEIS as a future project with minimal cumulative effect. Both this project and additional planning on improvements to I-15 in the Provo-Orem area are being advanced in response to localized problems, changes, and/or growth; and are not expected to have any impact on canyon travel patterns.

To the best of our knowledge, all pertinent past, present, and reasonably foreseeable future actions in and around the general project area have been disclosed and their cumulative effects accounted for in the SEIS.

III. INDUCED GROWTH

1. General Growth

Comment:

One comment suggests that issues of induced growth resulting from the proposed action have not been appropriately considered. (Appel)

Response:

As determined in the new traffic study conducted for the project (Appendix B of FSEIS) and discussed in Chapter 1 of the SEIS, a worst-case estimate of induced traffic as the result of completing the project is a six percent increase in traffic volumes by 2020. See FSEIS, p. 1-13.

As discussed in considerable detail in Chapters 3 and 4 of the SEIS, future growth in Wasatch County will certainly occur, but cannot be attributed to improvement of US-189. As also discussed, the extent and location of that growth will be closely controlled by several new zoning ordinances recently approved by the County. Impacts from this growth are discussed in the Land Use, Socioeconomic, and Cumulative Effects sections of Chapter 4 in the SEIS.

2. Canyon Meadows - Potential for Additional Development

Comment:

Some comments contend that the SEIS does not accurately describe a range of issues related to the existing conditions and potential for future development in the Canyon Meadows area. Issues raised by the comments include the number of platted lots; the potential for full build-out of the platted lots; and the potential for new development to occur outside the original platted lots. (Appel, Orvis)

Response:

The SEIS describes existing conditions in the Canyon Meadows area in the Land Use section of the Affected Environment chapter. That section of the SEIS states that the Canyon Meadows area currently includes approximately 26 year-round residences; that a total of 84 lots have been platted for development; and that the County, the Canyon Meadows homeowners association, and the developer are "in a variety of litigation with regard to building permits and previous development constraints." See FSEIS, p. 3-21.

The SEIS describes the potential for future build-out of the Canyon Meadows development in the Land Use section of the Environmental Consequences chapter. That section of the SEIS states that "the 2002 Preferred Alignment will not affect existing platted lots within Canyon Meadows." (FSEIS, p. 4-29) It also recognizes the potential for build-out of the platted lots, stating that "Other than the remaining platted lots in the Canyon Meadows development, which are subject to Wasatch County approval for building permits, no growth plans for the highway corridor are in place..." (FSEIS, p. 4-30).

In response to the comments received on the FSEIS, FHWA and UDOT have consulted with Wasatch County planners to reassess and confirm the present status of the platted lots and any pending litigation regarding future development of the Canyon Meadows community. The information received from Wasatch County is as follows:

Number of Platted Lots:

- The Canyon Meadows development originally received approval from Wasatch County in the early and mid-1980s as two separate plats (Plat A and Plat B).

- There have been modifications to these plats since original approval, two in particular defined the Glades and Juniper condominiums.

- Canyon Meadows currently is in the build-out process, with a total of 84 lots which could be developed in Plat A and Plat B. The majority are single-family residences, but two condominium areas (Glades and Juniper) are included.

- Development of the platted lots would require appropriate building permits from Wasatch County.

Limits on Build-Out of Platted Lots:

- A major constraint on the build-out potential of Canyon Meadows is septic tank suitability. Certain Canyon Meadows areas may not contain soils or slopes that would be appropriate for septic tanks, pursuant to State and Wasatch County Health Department rules.

- In 1997, this issue became of sufficient concern to Wasatch County that two building permit moratoria were enacted by the Wasatch County Commission for Canyon Meadows.

- The first moratorium was adopted on Jan 13, 1997, and required a six-month moratorium to allow a study of soil/septic suitability at Canyon Meadows. This study was completed by AGEC in the spring of 1997.

- A second moratorium was adopted on Oct 13, 1997 and called for a study of slope stability in the same area. This moratorium was open-ended in duration; however, the County resumed issuing building permits in November, 1998.

- No building permit moratoria currently exist. As a part of the process for a building permit in Canyon Meadows to be issued by Wasatch County, the County Health Department reviews individual lot percolation test results to ensure septic tank suitability.

- Due to the septic issue and financial constraints, in 1999 New Canyon Meadows LC applied to the Wasatch County Commission for approval of a Special Service District, which could allow an additional tax levy to be placed on homeowners to help offset costs of a potential multi-unit wastewater treatment system (as well as a potential culinary water system) for expansion of the development.

- In June of 1999 the Wasatch County Commission approved the Owl's Nest Special Service District (SSD). The Wasatch County Council (formerly the County Commission as the result of a change in County government) is the governing board of the SSD, meaning that any request for additional tax levy or other action of the SSD must be approved by the County Council.

- Despite being approved, the Owl's Nest SSD has not been implemented.

Potential for Additional Lots

- New Canyon Meadows LC (owned by the developer of the original Canyon Meadows) owns approximately 130 acres surrounding the existing platted lots, and has proposed additional lots in the adjacent land.

- New Canyon Meadows LC has a vested right to develop up to 14 additional residential lots (Plat C) on their property in the Canyon Meadows area, dependent upon obtaining Wasatch County Planning Commission approval for these additional lots.

- Since the soil in portions of this property may not be suitable for septic systems and because no system for providing culinary water to the additional lots exists, the actual number of lots that could be developed may be lower than the on-paper potential.

This information from Wasatch County confirms the findings presented in the FSEIS regarding the Canyon Meadows development. As stated in the SEIS, the Canyon Meadows development consists of 26 homes, on a total of 84 platted lots. There are unresolved questions concerning the potential for additional development in the Canyon Meadows area on platted lots and in other areas. In general, the potential for additional development, even on the platted lots, is limited by the number of septic systems that can be accommodated in the area.

IV. MITIGATION MEASURES

Comment:

One comment suggests that additional detail is needed in the discussion of mitigation measures that will be employed to minimize environmental impacts, citing NEPA at 40 CFR 1502.14(f) and 16(h) (Appel).

Response:

The 1989 SEIS included a variety of mitigation measures for the Preferred Alignment and these mitigation measures have been incorporated into the project, as appropriate, and additional measures specific to the 2002 Preferred Alignment are listed by resource

in the 2003 FSEIS. Mitigation measures are provided in detail for the 2002 Preferred Alignment on pages 4-62 to 4-66, and such measures are presented as commitments and will be incorporated into the project. Many potential impacts have been eliminated or reduced by adjusting the proposed action and/or avoiding sensitive resources. The remaining impacts associated with construction and operation of the project will be minimized by adhering to current UDOT standard specifications for road and bridge construction and a variety of project-specific design specifications.

As noted, the mitigation measures at times commit to the preparation of a detailed plan based upon final design specifics. These plans will be developed in coordination with the appropriate agencies for adequacy and will be strictly enforced during construction.

V. SECTION 4(f) STATEMENT

Comment:

One comment raises concerns about compliance with Section 4(f). In particular, the comment contends that the Section 4(f) evaluation should have considered out-of-canyon alternatives, and other alternatives previously eliminated from detailed study, or a combination thereof, as a means to avoid Section 4(f) impacts in the Canyon. (Appel)

Response:

Section 4(f) prohibits the use of certain protected lands, including historic sites, unless FHWA finds that there is no prudent and feasible alternative to that use and that the project includes all possible planning to minimize harm. As documented in Chapter 5 of the SEIS, the FHWA has complied with this requirement.

This project will involve the use of one Section 4(f)-protected resource – the Deer Creek Reservoir Dam, which is a historic site. As noted in Chapter 2, a wide range of alternatives have been considered and evaluated over the years on this Project. The "out of canyon" and other alternatives noted by the comment were evaluated and were found to be unreasonable or imprudent (See page 3 -Section II. A. - Range of Alternatives for discussion). The 1989 SEIS Alignment would avoid the dam complex by constructing two large bridges, but the bridges would result in substantial impacts to visual and recreational resources in the area and would be very costly. The Split Alignment variation at this location would have even greater environmental impacts and costs. As a result, there is no feasible and prudent alternative to the use of the Section 4(f) resources (page 5-19 and 5-20). Both the 1989 SEIS alternative and the Split alternative would adversely affect the Heber Valley Historic Railroad as well as Deer Creek State Park, two other 4(f) resources.

VI. ADDITIONAL ISSUES

1. Haul Road

Comment:

One comment expresses concern about the characterization of the "haul road" in the SEIS. The comment contends that the original rationale for construction of the haul road was a "sham" and that it was never intended to be used for hauling fill. (Orvis)

Response:

As explained in the SEIS, the haul road was built during the construction of the Upper Falls to Wildwood segment of the US-189 improvement Project. The purpose of the haul road was to "move excess fill material to a future fill slope without impacting existing traffic." (FSEIS, p. 2-6). In other words, the haul road was designed to provide a parallel route to the existing US-189, and thus provide a route for large, off-highway hauling trucks to use instead of traveling on the existing two-lane US-189. See FSEIS, p. 5-26, Photo 5-4.

During the construction of the Upper Falls to Wildwood segment, a major rock slide occurred just outside of the project limits. This slide crossed US-189 and the haul road, which was immediately adjacent to the highway at this location, resulting in the restriction of highway traffic to one lane and the elimination of that portion of the haul road. As a result of these circumstances, the large, off-road trucks planned for use on the haul road could not be used, the haul road was not fully utilized, and a substantial modification to the contractor's budget was required.

2. Role of CAT

Comment:

One comment contended that the Cooperating Advisory Team (CAT) was not sufficiently involved in the study process. In particular, the comment's concern was that the CAT was not involved in the selection of the preferred alternative. (Orvis)

Response:

As explained in the SEIS, public involvement in the development of the Provo Canyon Improvement Project has been under way since 1986, when work began on the 1989 SEIS. These efforts have included several different types of Project advisory teams. These are described at pp. 6-8 to 6-9 of the FSEIS as follows:

- During the 1989 SEIS, a committee was formed to provide public input. The committee met ten times between 1987 and 1989. This committee provided

input into the original decision to upgrade US-189 to four-lanes through Provo Canyon.

- During the 1995 Reevaluation for the Wildwood to Deer Creek State Park segment, a Design Advisory Committee (DAC) was formed. The DAC met approximately every six weeks beginning in January 1994. The work of the DAC focused on the development and evaluation of adjustments to the 1989 SEIS preferred alignment between Wildwood and Deer Creek State Park. This group provided input into the decision, in 1995, to shift the preferred alternative away from the existing alignment of US-189 up the side of the canyon to its present location.

- During the current SEIS, a new Cooperating Advisory Team (CAT) was formed. The CAT met approximately 20 times between August 2000 and the completion of the FSEIS in April 2003. The CAT provided input into the topics addressed in the current SEIS – in particular, the evaluation geotechnical/stability issues and the protection of Provo River water quality and habitat.

Some participants in the current study process, including this comment, contended that the scope of the study should be expanded to include a reexamination of issues resolved in the 1989 SEIS and addressed in the 1995 re-evaluation, including issues such as the need for a four-lane highway and the viability of "out-of-canyon" alternatives (See page 3 -Section II. A. - Range of Alternatives for discussion). These alternatives have been considered and it has been determined that they do not meet the purpose and need for this Project. For that reason, the current SEIS focused on a comparison of two alternative routes for a four-lane highway in Provo Canyon. Similarly, the discussions with the CAT also focused primarily on those two alternatives.

3. Public Hearing Format

Comment:

Some comments objected to the "open house" format used in the public hearing on the DSEIS. The comments contended that a different format should have been used, in which members of the public could address UDOT and one another in a traditional hearing format. (Orvis, Hale)

Response:

Under federal law and FHWA regulations, a public hearing must include an opportunity for public comment and a transcript of the hearing must be provided to FHWA. Those requirements can be satisfied through a traditional public hearing in which attendees sit in a meeting hall and are addressed by a speaker standing at the front of the room, or they can be satisfied through an "open house" meeting, in which attendees have the opportunity to view displays and interact with representatives of UDOT and FHWA, while submitting comments to a court reporter. Both formats are acceptable under

federal and state law. The open-house format provides greater opportunities for interaction between agency officials and therefore is now used frequently by UDOT. The use of the open house format is an accepted practice for FHWA NEPA studies and is used in numerous states, as explained in Chapter 2A of “Public Involvement Techniques for Transportation Decision-making (1996), available at http://www.fhwa.dot.gov/reports/pittd/cover.htm.